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George R. Boyd on April 30 to May 14, visited Columbus, Ohio; Memphis, Tenn.; Stoneville, Miss.; Jeanerette and Houma, La.; and Auburn, Ala., to inspect field work and confer with bureau representatives and cooperating parties. At Memphis, O. M. Page was recovering from a surgical operation which had required leave of absence for two weeks.

L. A. Jones left Washington early in May for an extended trip covering southern field stations. C. E. Rensser, who had been in Washington to address the American Geophysical Union, accompanied Mr. Jones to Statesville, to Knoxville where they conferred with the Tennessee Valley Authority, and to Montgomery where they inspected the soil erosion work being done in Alabama. Mr. Jones inspected field work and attended a conference of E.C.W. workers at Jackson, Miss., inspected the work of B. O. Childs at Houma, La., and the erosion stations in Texas and Oklahoma.

A paper on "Agricultural Engineering Aspects of Settler Relocation in St. Louis County, Minn." has been prepared by D. G. Miller and N. A. Kessler, with L. H. Schoenleber of the Minnesota Agricultural Experiment Station, for the report on land use planning for northern Minnesota by the Bureau of Agricultural Economics and the Minnesota station.

A paper entitled "Erosion Control Work of Civilian Conservation Camps in the Gulf States" was written by W. D. Ellison for publication by the Association of Southern Agricultural Workers, giving the material presented at the Memphis meeting last February. Mr. Ellison also prepared a paper "Work of the E.C.W. Soil Erosion Camps in Alabama, Mississippi, Oklahoma and Texas," which was issued recently in mimeographed form by the Forest Service.

The total rainfall in 1933 at the Hays erosion station was 16.32 inches, 6.7 inches below normal, as compared with 31.66 inches in 1932 or 8.58 inches above normal. R. R. Drake states that water and soil losses in 1933 were least and those in 1932 were greatest of those occurring since the project was established in 1929.

Two complete years' results at the Bethany erosion station indicate that the greatest erosion damage occurs during a critical period for each particular crop, according to A. T. Holman. This critical period at the Bethany Station for meadow is during the dormant season of late winter and early spring; for corn, it extends from before planting time in May until cultivation ceases in July; for soybeans, it is immediately before and after planting during May and June; for wheat, it may extend from before seeding in September until early spring before the new growth starts; and for alfalfa, it is in the late winter and early spring and until a good stand of mature plants becomes established, during the first year or two after planting.

E. C. McGraw reports that the average annual soil loss from all terraces on the Pullman erosion station for a two year period was only 0.57 tons of soil per acre as compared with an average annual loss of 16.90 tons per acre from an unterraced watershed.



H. S. Riesbol reports a rain of high intensity on the Guthrie station on May 3. The total precipitation amounted to 2.43 inches, 0.94 inches of which occurred in two hours. Maximum intensities for short periods were as follows:- 5 minutes, 5.03 inches per hour; 10 minutes, 4.02 inches per hour; 15 minutes, 3.55 inches per hour; 20 minutes 3.12 inches per hour; and 30 minutes, 2.18 inches per hour. In addition to collecting some of the best run-off and erosion records since the station was established, a good set of measurements was obtained for the determination of the value of Kutters' n in a terrace channel in oats 6 inches high.

W. W. McLaughlin served on a special committee appointed by Governor Blood of Utah, upon request of the Water Users Association, for the purpose of working out a stipulation for the use of water out of Utah Lake, there being a deficiency of approximately 75 percent in this water supply. A stipulation was tentatively agreed upon which provides a basis for dividing the water and establishing a self-governing body to handle the apportionment. Provision was also made that when the soil survey now under way and irrigation studies now in progress are completed in from two to three years, the findings will be the basis for the future division of water from Utah Lake.

Mr. McLaughlin was appointed also a member of a special committee to arrange for the pumping of additional water out of Bear Lake for irrigating some 78,000 acres in Utah and about 30,000 acres in Idaho. Arrangements were completed involving the deepening and extension of the inlet channel from the lake to the pumps, and an agreement was consummated between the primary users and the power company which resulted in giving from 2/3 to 3/4 of a full water supply to all users, with a prospect of a possible 90 percent supply.

Colin A. Taylor prepared a paper entitled "The Wilting Range in Certain Soils and the Ultimate Wilting Point," for presentation before the Washington, D. C. meeting of the Hydrology Section, American Geophysical Union.

Wells A. Hutchins has begun a six weeks trip through the southwestern and middle western States to obtain data for a bulletin on sewage irrigation.

Upon request of interested farmers and the county agent at Ellensburg, Wash., J. C. Marr and L. T. Jessup made a study of drainage problems of Kittitas Valley, and of a drainage system for approximately 100,000 acres of irrigated land in that valley. Aside from difficult drainage conditions imposed by steep slopes and shallow soils, irrigation practices and flood conditions were found to make drainage plans difficult to prescribe. A report is being prepared on results of the investigation.

An experiment to obtain additional information on the effect of varied degrees of available soil moisture upon some tree responses was undertaken by R. A. Work at the Medford experiment station in cooperation with the Bureau of Plant Industry. The average soil moisture content of the rooting space of each of six trees will be carefully followed by means of moisture determinations at each foot depth in each of ten holes per tree. Rate of fruit growth will be determined by semi-weekly measurements. The soil moisture will be allowed to drop almost to the permanent wilting percentage in the upper foot below the mulch before the plot is irrigated. After irrigation is applied 20 percent of the roots will be removed from each of one pair of trees, and 20 percent of the leaves removed from each of another pair of trees. The remaining two trees will be used as checks, and leaf-fruit-root ratio will remain the same as it now is on those two trees. The expected differences in rate of fruit growth between the three pairs of trees should give some measure of the importance of the leaf-fruit-root ratio.



The cotton ginning and fiber laboratories at Stoneville, Miss., were visited early in May by Geo. R. Boyd and by W. H. Redit.

Chas. A. Bennett addressed the ACCO Cotton School at Houston, Tex., May 14 on Some Ways to Improve Ginning, and addressed the Georgia Ginnors' Association at Atlanta, May 24, on Some Mechanical Elements Involved in Good Ginning. He attended the hearings on a code for cotton ginnors, at Washington on May 18.

To witness demonstrations and receive instruction on latest developments in oxy-acetylene welding and cutting, R. C. Young of the ginning laboratory attended the Linde Welding Clinic at Birmingham, Ala., May 16 to 19.

R. B. Gray left Washington May 21 to inspect construction work on the testing plots at the tillage machinery laboratory at Auburn, Ala. Bids have been opened for construction of the laboratory building there. Before returning to headquarters, Mr. Gray will inspect the work of his Division at field stations in the South and West.

G. A. Culings left Washington early in May to supervise work in connection with fertilizer placement studies in Michigan, Maine, and New York. Fertilizer placement tests with tobacco in North Carolina are being made by A. L. Sharp and W. R. Humphries. Similar tests with potatoes are being made in Michigan by W. G. Redit and C. W. Brockseker.

For the purpose of planting experimental plots of corn with the basin lister-planter which was developed on the corn production machinery project, L. G. Schoenleber spent May 7 to 14 at Clarinda, Cherokee, Storm Lake, Eldora, and Grundy Center, Iowa. These experimental plots are located on three different soil areas (Marshall, Carrington and Tama) and on considerable variation as to topography. These outlying experiments, together with plots on the Webster type of soil on the experiment farm at Ames, are designed to determine the adaptability of this new method of growing corn to conditions found in different parts of Iowa.

An experimental burner for use in the control of pea weevil is being prepared by O. K. Hedden of the Toledo office, at the University of Idaho, at Moscow, Idaho.

Experimental plow equipment, disc jointers, and trash guides being used by co-operating farmers near Toledo are giving very satisfactory results. The farmers are particularly pleased with the performance of the disc jointers.

R. M. Merrill spent several days at Ames, Iowa and Urbana, Ill. in connection with the experimental work with plow equipment.

In addition to operating the apron conveyor dryer at Jeanerette, La., (with which the Bureau of Dairy Industry is being furnished artificially dried alfalfa hay,) experiments were carried on with the recently built tower dryer. An arrangement of the moveable baffles has been made by E. D. Gordon, which serves to retard the downward movement of the chopped forage, thus making the dryer more effective.

A spray gun cut-off of special design, constructed of stainless steel, has been completed at Albany, Ga., E. M. Dieffenbach states.

A crust breaker attachment for a beet cultivator has been constructed by E. M. Mervine. This implement is made in sections, alternate sections being loose on the axle thus making it a self-cleaning tool. The roller sections are faced with spikes slightly bent so that they puncture the crust without moving it. Field trials indicate its successful operation.

J. W. Randolph reports that the pivot axle walking cultivator developed at Auburn, Ala. has been rebuilt to meet conditions encountered in cultivating steep hillsides and over terraces.



To present a plan for simplified farm wiring to the Tennessee Valley Authority, Geo. W. Kable made a trip to Knoxville recently with a representative of the Association of Edison Illuminating Companies. The Bureau has been interested in lower cost wiring in connection with the Farm Housing Survey.

Reports on the Rural Electrification Survey, which ended officially on April 28, have been received from 12 of the 25 States concerned. The reports include county maps with detailed information regarding present and prospective rural lines and customers, together with supporting data on rural electrification development.

Rotaprints for a number of farmhouse designs prepared in connection with the Farm Housing Survey are now available for use in general correspondence while awaiting publication of the anticipated bulletin on farmhouse plans.

A. D. Edgar is on temporary duty in the Washington Office to assist with the Rural Housing Project.

The results of distillate oil burner tests have been presented in a manuscript by A. H. Senner prepared for department publication. The tests included range burners, water heaters, and space heaters. Burners of the distillate type operate with gravity feed and do not require electric current for operation, and are therefore suitable for general farm use where oil can be obtained at reasonable prices.